

University of California Cooperative Extension

Sample Production Costs for Wrapped Iceberg Lettuce Sprinkler Irrigated – 40-inch Beds

Central Coast Monterey, Santa Cruz, and San Benito Counties 2010



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For information about the calculations used in this report, refer to the attached narrative, call Laura Tourte, UCCE Santa Cruz County (831) 763-8005, or Richard Smith, UCCE Monterey County (831) 759-7357. Copies of this study can be accessed at the following Web site: <http://coststudies.ucdavis.edu>. It may also be requested through UCCE Santa Cruz and Monterey Counties.

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The practices described in this study are considered common for wrapped iceberg or head lettuce production in Monterey, Santa Cruz, and San Benito Counties. Sample costs are given for tractor, fuel, repairs, labor, materials, and custom services, and are based on current figures. *Costs per acre can vary considerably depending on many variables including individual grower, production location and weather conditions, land rent and taxes, soil type, water costs, pest pressures, material inputs, and energy costs.* For example, lettuce produced in areas with heavy clay soils may have higher land preparation costs per acre than areas with sandy soils. Areas with sandy soils, in turn, will likely have higher water use and irrigation costs per acre than areas with heavy clay soils. The practices and costs used in this study may not be applicable to all situations or used in each production year. This study is intended as an estimate or guide, which can be helpful in making production decisions, determining potential returns, preparing budgets, and evaluating production loans. Individual growers may use this study as a template and modify it to more accurately reflect their own situations. The practices shown in this study are not intended as a recommendation by the University of California.

Acknowledgements. Appreciation is expressed to the Central Coast growers, packers, and other industry representatives who provided information, assistance, and expertise for this study.

Production Statistics. In Monterey, Santa Cruz, and San Benito Counties head lettuce consistently ranks as a major crop with respect to yield and value of production. The following table presents information on annual acreage, yield per acre and value of production from 2005 to 2009 for Monterey County. Similar yields and values of production can be expected for Santa Cruz and San Benito Counties.

**Annual Planted Acreage, Yield and Value of Production for Head Lettuce^{†‡}
in Monterey County 2005-2009.**

Year	Acreage	Yield/Acre [§]	Value/Acre (\$)	Value/Carton (\$)
2005	64,456	804	5,990	7.45
2006	66,007	725	6,728	9.28
2007	58,887	830	8,632	10.40
2008	54,919	824	8,388	10.18
2009	48,691	928	8,955	9.65

[†] Source: Monterey County Agricultural Commissioner's Crop Reports.

Web site: <http://www.co.monterey.ca.us/ag/>.

Similar yields and values can be expected for Santa Cruz and San Benito Counties.

[‡] Includes all pack types.

[§] Yield/Acre assumes 50-pound cartons.

Varieties. Varieties of iceberg lettuce types planted in this area include Steamboat, Cannery Row, Gabilan, Sure Shot, Corona, and many others.

Yield and Returns. For this study, the yield range for wrapped iceberg lettuce is shown to be from 800 to 1,100 24-count 42-pound cartons per acre. Actual yield depends on many variables including production conditions and location. The price range is shown to be from \$9 to \$13 per carton; actual price will depend on market conditions. The tables that follow give more information on yield and price ranges, including sample net returns above indicated costs, along with the breakeven price per carton.

Land Preparation and Planting. Land preparation includes discing, subsoiling, chiseling, leveling land, and preparing the seed beds. Head lettuce is planted in Monterey, Santa Cruz, and San Benito Counties

from late December through mid-August for harvest between April and October. It can be grown on a variety of soil types provided soil has good structure and drainage. Although Monterey County has a “host or lettuce free period” (December 7 to December 21) during which time lettuce may not be planted, Santa Cruz and San Benito Counties do not. The purpose of the host free period is to break pest cycles and decrease the incidence of Lettuce Mosaic Virus (LMV). All counties require lettuce seed to be indexed and shown to be free of LMV prior to planting.

Head lettuce can be direct seeded or transplanted. This study assumes lettuce is direct seeded with pelleted seed using a precision planter on 40-inch double-line beds. It should be noted that iceberg lettuce is also produced on 80-inch five to six line beds. Costs for this type of production are not included in this study.

Irrigation. Seedbeds are sprinkler irrigated after planting; sprinkler irrigation is also used for the remainder of the season. Labor costs include time to set up and monitor the sprinkler system for proper function. Iceberg lettuce is also produced using drip irrigation; costs for this system are not considered in the study.

Fertility Management. Growers often plant cover crops such as Merced Rye on a portion of their acreage during each production year to build soil organic matter and improve soil structure. The cost for one cover crop per four vegetable crops is included in this study. Soil amendments, which can include such materials as composted manure, gypsum and/or lime, are applied during land preparation.

Fertilizer costs include a pre-plant fertilizer, which is applied at the time beds are listed. At planting an anti-crustant may also be applied. During the growing season, lettuce is side dressed twice. A water-run fertilizer may also be applied later in the growing season depending on crop needs.

Pest Management. Weeds are managed using one herbicide application at planting, mechanical cultivations, and hand weeding. Material applications for insect and disease management vary from year to year and location to location. An estimated cost per acre for materials and custom application is included in this study.

Business Costs, Land Rent and Taxes. Overhead costs are included in this report at \$250 per acre. Costs include, but are not limited to, a variety of administration and office expenses, telephone, supplies, utilities, bookkeeping and accounting. Food safety and sanitation costs are estimated at \$45 per acre. Costs for compliance with regulatory programs such as water and air quality are estimated to be \$50 per acre. Land rent and taxes are included in this study at \$1,200 per acre, *and can vary significantly from location to location in Monterey, Santa Cruz, and San Benito Counties.*

Harvest Operations. Harvest is either performed by the grower or a custom harvest company. In this study harvest, pack, and selling costs for wrapped iceberg lettuce are calculated at \$5.85 per 24-count 42-pound carton. Cooling costs are an additional \$1.00 per carton. Costs will vary depending on the pack type and packing company, with some packs increasing costs considerably.

Additional Information. *Iceberg Lettuce Production in California*, a publication of the University of California Division of Agriculture and Natural Resources, is available at many county UC Cooperative Extension offices. The same publication may be accessed at: <http://anrcatalog.ucdavis.edu/pdf/7215.pdf>

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Operation	No. Times/ Crop/Acre	Cost/Time/ Acre[†]	Material or Custom Type	Cost/Acre	Hand Labor[‡] Hours/Acre	Cost/Acre	Total Cost[§] (\$/Acre)
<i>Land Preparation & Planting</i>							
Disc	8	20					160
Sub Soil (to 32")	2	45					90
Chisel (to 20")	2	30					60
Finish Chisel	2	24					48
Land Plane	1	40					40
Laser Plane (1 per 4 veg crops)	.25	80					20
Lilliston	4	17					68
Harrow & Shape Beds	2	17					34
Plant	1	25	Seed	150			175
Cultivate & Break Bottoms	4	14					56
<i>Sub Total</i>							<i>751</i>
<i>Irrigation - Sprinkler</i>							
Pre Irrigate	2	15	2 ac in	22	1.3	15	67
Irrigate - Germination	1	15	3 ac in	33	2.3	25	73
Irrigate - Season	5	15	12 ac in	132	11.4	130	337
<i>Sub Total</i>							<i>477</i>
<i>Custom/Contract</i>							
Thin			Custom	100			100
Hand Hoe			Custom	80			80
<i>Sub Total</i>							<i>180</i>
<i>Fertility Management</i>							
Cover Crop (1 per 4 veg crops)	.25	15	Seed	45			15
Soil Amendments [§]	1	17	Multiple	75			92
List & Fertilize Beds	1	15	Preplant	129			144
Side Dress Beds [§]	2	17	Multiple	264			298
<i>Sub Total</i>							<i>549</i>
<i>Pest Management</i>							
Herbicide (applied at planting)			Herbicide	50			50
Insects & Diseases	Multiple		Multiple				525
Pest Control Adviser							25
<i>Sub Total</i>							<i>600</i>
<i>Misc Business Costs</i>							
Food Safety/Sanitation							45
Regulatory Programs							50
Overhead*							250
<i>Sub Total</i>							<i>345</i>
<i>Total Growing Costs</i>							<i>2,902</i>
<i>Land Rent & Taxes</i>							<i>1,200</i>
<i>Total Growing Costs/ Land Rent & Taxes</i>							<i>4,102</i>

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(continued)

Operation	No. Times/ Crop/Acre	Cost/Time/ Acre [†]	Material or Custom Type	Cost/Acre	Hand Labor [‡] Hours/Acre	Cost/Acre	Total Cost [¶] (\$/Acre)
<i>Harvest^{††}</i>							
Harvest, Pack, Sell @ \$5.85/carton			Cartons/ Sales	2,160		2,520	4,680
Cool @ \$1.00/carton							800
<i>Total Harvest Costs</i>							<i>5,480</i>
<i>Total Costs (Growing, Land Rent & Taxes, Harvest)</i>							<i>9,582</i>
<i>Total Costs/Carton^{††}</i>							<i>11.98</i>

[†] Includes tractor and driver, fuel, equipment repairs. Tractor labor is \$13.40 per hour including 34% benefits/overhead.

[‡] Hand labor is \$11.40 per hour including 34% benefits/overhead.

[¶] Costs per acre can vary considerably depending on many variables including production location and weather conditions, land rent and taxes, soil type, water costs, material inputs, and energy costs.

[§] May include gypsum, compost, water-run fertilizer, and/or soil anti-crustant.

^{*} Includes interest on operating capital.

^{††} Assuming a yield of 800 cartons per acre. Each carton is 24-count and 42-pounds.

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Sample Net Returns Above Growing, Land Rent & Taxes, Harvest Costs for Wrapped Iceberg Lettuce
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Yield (Cartons/Acre)	Price/Carton (\$)					Breakeven Price (\$/Carton)
	9.00	10.00	11.00	12.00	13.00	
800	-2,382	-1,582	-782	18	818	11.98
875	-2,221	-1,346	-471	404	1,279	11.54
950	-2,060	-1,110	-160	790	1,740	11.17
1,025	-1,898	-873	152	1,177	2,202	10.85
1,100	-1,737	-637	463	1,563	2,663	10.58